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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,828	10/15/2003	Eric S. Olson	TCOM0010	8474

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TENSORCOMM, INC.  
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EXAMINER	
AHN, SAM K	

ART UNIT	PAPER NUMBER
2611	

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/686,828

Applicant(s)

OLSON ET AL.

Examiner

Sam K. Ahn

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-30 is/are allowed.
- 6) ☒ Claim(s) 1-24 and 31-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see p.13, first paragraph, filed 11/15/07, with respect to 35 U.S.C. 101 have been fully considered and are persuasive. The rejection of the claims has been withdrawn. However, upon further consideration, the claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal formed in an interference matrix representing certain symbols falls within any of the categories of patentable subject matter set forth in 101
2. Applicant's arguments, see p.13, second and third paragraphs, filed 11/15/07, with respect to 35 U.S.C. 101 of claim 13 have been fully considered and are persuasive.
3. Applicants' argument, see p.16 regarding claim 15 is not persuasive. The claims recites "a first element". Madhow teaches an interference matrix (matrix  $U_i$  comprises vectors of, note col.6, line 67 – col.7, line 1, at least three vectors explained in col.6, lines 19-20,30-31 and 42), comprising: at least three interference vectors corresponding to at least three interfering symbols and having a number of elements equal to a number of elements in a desired symbol ( $U^{L0,2}$ ,  $U^{R0,2}$  and  $U_{0,1}$  having 8 elements, see Fig.3), wherein each of said at least three interference vectors includes zero values for a plurality of said elements and a non-zero value for

at least a first element (see Fig.3 wherein the vectors comprises zero values and non-zero values).

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-24 and 31-34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in 101.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Madhow et al. US 6,175,587 (Madhow, cited in the IDS).

Regarding claim 15, Madhow teaches an interference matrix (matrix  $U_i$  comprises vectors of, note col.6, line 67 – col.7, line 1, at least three vectors explained in col.6, lines 19-20,30-31 and 42), comprising: at least three interference vectors corresponding to at least three interfering symbols and having a number of elements equal to a number of elements in a desired symbol ( $U^{L0,2}$ ,  $U^{R0,2}$  and  $U_{0,1}$  having 8 elements, see Fig.3), wherein each of said at least three interference vectors includes zero values for a plurality of said elements and a non-zero value for at least a first element (see Fig.3 wherein the vectors comprises zero values and non-zero values).

Regarding claim 16, Madhow further teaches wherein a sum of said elements having non-zero values in said at least three interference vectors is equal to a length of said symbol of interest (see  $U_{0,1}$  wherein the sum equaling to 8, which is the length of the desired symbol).

Regarding claim 17, Madhow further teaches further comprising: at least a fourth interference vector corresponding to a fourth interfering symbol and having a number of elements equal to said number of elements in said desired symbol (fourth interference vector  $U^{L1,2}$  also having 8 elements, see Fig.3).

Regarding claim 18, Madhow further teaches further comprising at least two interference vectors corresponding to at least fourth and fifth interfering symbols and having a number of elements equal to said number of elements in said desired symbol, wherein said at least two interference vector includes zero values for a plurality of said elements and a non-zero value for at least a first element (fourth and fifth interference vectors  $U^{L1,2}$  and  $U^{R1,2}$  also having 8 elements, see Fig.3).

***Allowable Subject Matter***

6. Claims 25-30 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam K. Ahn  
Patent Examiner

1/16/08